



AT&T
Bell Laboratories

subject: Radiation Survey of AECL Model GC220
Gamma-Cell
SN 136
Case 48100-2

date March 7, 1985
from S. S. Voris
MH 77622
1F-101F X4645

A radiation survey was conducted on 3/7/85 of the AECL Model GC220 EX.4
Gamma-Cell located in [REDACTED]. The activity of the Co-60 source as of
3/7/85 was 10.98 MCi. Access to the Gamma-Cell, as indicated in the
attached drawing, is controlled by [REDACTED]

EX.4

Results of the survey, with reference to the attached drawing, are as follows:

- Location A 4.0 mR/hr maximum at 6 inches from the front surface at a height of 32 inches with elevator in up position. 5.5 mR/hr with elevator down.
- Location B 2.5 mR/hr maximum at 6 inches from the left side surface at a height of 32 inches with elevator up. 3.6 mR/hr with elevator down.
- Location C 3.6 mR/hr maximum at 6 inches from the back surface at a height of 32 inches with elevator up. 5.0 mR/hr with elevator down.
- Location D 2.3 mR/hr maximum at 6 inches from right side surface at a height of 32 inches with elevator up. 3.6 mR/hr with elevator down.

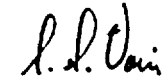
A measurement indicating 6 mR/hr was made at 3 inches from the bottom of the source container. The radiation level inside the sample chamber in the up position was 24 mR/hr. With the sample chamber shield doors closed a reading at the top surface was 1.4 mR/hr. A maximum reading at the top of the elevator in the down position showed 4.6 mR/hr. A reading of about 80 mR/hr was indicated at the top of the elevator during its up-down cycle for an exposure period of about 2 seconds.

Additional measurements were made in the adjoining room [REDACTED] EX.4
radiation above normal background levels of 0.01 to 0.02 mR/hr were detected. A survey of the top of the block wall adjacent to the Gamma-Cell showed a level of 0.02 mR/hr. The levels outside the block wall were at normal background with the exception of the opening to the Gamma-Cell where a level of 0.9 mR/hr was detected. The survey was conducted with a Health Physics Instrument Model 1010 Ion Chamber meter last calibrated 11/29/84.

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Act, exemptions 4
FOIA-2002-0104

D11

A routine quarterly leak test was made of the radioactive source by wiping the outside of the sample chamber. The wipe sample, measured with a Tennelec 5100 series low background gas flow proportional counting system, indicated a contamination level of $<1.33 \times 10^{-6}$ μCi . The Bell Laboratories action level is 5.00×10^{-5} μCi of removable contamination for beta-gamma sealed sources. The source must be taken out of service and reported to the Nuclear Regulatory Commission if the leak test shows a contamination level of 5×10^{-3} μCi or greater.



S. S. Voris
Radiological Safety Officer

MH-77622-SSV-md

Att.

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CORRIDOR Survey - S. Voris



EX. 4

SCALE

$\frac{1}{4}$ INCH = 1 FOOT